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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,101	09/26/2003	Ann Marie Smith	LIT-PI-304a.D1	1940

7590 10/26/2004  
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EXAMINER

ADDIE, RAYMOND W

ART UNIT	PAPER NUMBER
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3671

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/673,101

Applicant(s)

SMITH ET AL.

Examiner

Raymond W. Addie

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/20/04

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because in line 1 the phrase "A sensor system is disclosed"; is redundant and should be --A sensor system--.  
Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al.

# 5,961,437 in view of Smith et al. # 6,016,714.

Smith et al. '437 discloses that in an underground barrier excavating and emplacement apparatus (220) having means (31) for excavating earthen material from about a buried waste site, and conveyor means (33) for carrying the excavated material outwardly of the apparatus.

Although Smith et al. '437 clearly discloses excavating soil adjacent and/or below a known waste site, Smith et al., '437 does not disclose determining if the excavated soil contains pollutants leached drums or the like, known to be in the waste site. See col. 4.

However, Smith et al. '714 teaches it is known to dispose a plurality of sensors (704, 708, 716, 720) adjacent a conveyor (991) that is carrying material excavated from a buried waste containment site during an excavation process. See Col. 2, Ins. 32-39.

Smith et al. '714 further discloses the use of a signal processor means (716, 728, 732) for processing said signals and for producing human perceivable representations of the physical properties identified by the signals.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the excavation and emplacement device of Smith et al. '437, with pollution detection sensor systems, as taught by Smith et al. '714, in order to determine the pollutant type and content of the material being excavated. See col. 4, ln. 34-col. 5, ln. 32; Fig. 3.

In regards to Claims 2-6, 9-13 Smith et al. '437 discloses an underground containment barrier excavating and emplacement apparatus (220) having means (31) for excavating earthen material from about a buried waste site, and conveyor means (33) for carrying the excavated material outwardly of the apparatus. But does not disclose disposing a sensor system adjacent the conveyor means (33) for detecting the physical properties of the excavated material. However, Smith et al. '714 teaches it is advantageous to dispose a gamma ray spectrometer (704), and X-ray fluorescence detector (708), an analyzer (712/716) adjacent i.e. above or below a conveyor (991), as well as a

scintillating fiber bundle (720) adjacent a conveyor (991) that is carrying material excavated from a buried waste containment site during an excavation process.

Wherein the analyzer (716) could further comprise an acousto-optic tunable filter or a Fourier-transform infrared spectrometer, to sense and display a human perceivable representation of the physical properties being excavated.

See Col. 4, ln. 34-col. 5, ln. 32. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the excavation system of Smith et al. '437 with various pollution detecting devices, as taught by Smith et al. '714, in order to detect various types of pollution in the excavated material.

In regards to claims 14, 15 Smith et al. '437 discloses the claimed invention as put forth above, but does not disclose disposing a plurality of sensor above or below a conveyor for analyzing the physical properties of the excavated soil. However, Smith et al. '714 teaches it is desirable to provide a plurality of sensors (704, 708, 716, 720) adjacent a conveyor (991) that is carrying material excavated from a buried waste containment site during an excavation process. See Col. 2, lns. 32-39. Wherein at least 2 sensors are from the group consisting of a gamma ray spectrometer, and X-ray fluorescence detector, a scintillating fiber bundle, an acousto-optic tunable filter and a Fourier-transform infrared spectrometer.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the excavation system of Smith et al. '437 with various pollution detecting devices, as taught by Smith et al. '714, in order to detect various types of pollution in the excavated material.

### ***Response to Arguments***

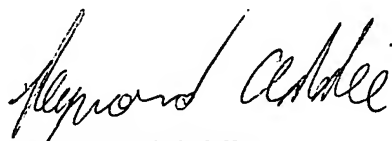
3. Applicant's arguments, see pages 6-10, filed 8/20/04, with respect to the rejection(s) of claim(s) 1-6 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Smith et al. # 6,016,714.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond W. Addie whose telephone number is 703 305-0135. The examiner can normally be reached on 8-2PM, 6-8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on 703 308-3870. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Raymond Addie**  
**Patent Examiner**  
**Group 3600**

10/21/04